

## CLAIMS

What is claimed is:

1. A system for providing an interface between a wireless switch and an interworking function, comprising in combination:
  - a wireless switch;
  - an interworking function; and
  - 5 an Ethernet link connecting the wireless switch and the interworking function, wherein both signaling information and bearer data are transmitted over the Ethernet link.
2. The system of claim 1, wherein the interworking function includes an Access Router card connected to a Primary Rate Interface card.
3. The system of claim 2, wherein the Access Router card is connected to a Network Interface card that provides an interface between the Access Router card and the wireless switch.
4. The system of claim 2, wherein the Access Router card functions to translate data messages between a wireless network and a Public Switched Telephone Network.

5. The system of claim 4, wherein the Access Router card packetizes data sent from the wireless network to the Public Switched Telephone Network.
6. The system of claim 4, wherein the Access Router card de-packetizes data sent from the Public Switched Telephone Network to the wireless network.
7. The system of claim 1, wherein the interworking function includes a chassis having a Network Interface card, an Access Router card, a Primary Rate Interface card, an application card, and a modem card.
8. The system of claim 7, wherein the application card provides signaling information to the Access Router card using a signaling protocol.
9. The system of claim 8, wherein the signaling protocol provides a method of transferring trunk, port, and IP address information from the application card to the Access Router card.
10. The system of claim 9, wherein the IP address information includes an IP address of the wireless switch, an IP address of the application card, an IP address of the Access Router card, and a UDP port number to be used for data exchange between the Access Router card and the wireless switch.

11. A system for providing an interface between a wireless switch and an interworking function, comprising in combination:

a wireless switch;

an interworking function having a chassis including a Network Interface card, an Access Router card, a Primary Rate Interface card, an application card, and a modem card, wherein the Access Router card is connected to the Primary Rate Interface card in the chassis, wherein the application card communicates with the Access Router card using a signaling protocol that provides a method of transferring trunk, port, and IP address information from the application card to the Access Router card; and

an Ethernet link connecting the wireless switch and the interworking function, wherein both signaling information and bearer data are transmitted over the Ethernet link.

12. A method for providing an interface between a wireless switch and an interworking function, comprising in combination:

connecting an Ethernet link between a wireless switch and an interworking function, wherein both signaling information and bearer data are transmitted over the Ethernet link;

connecting an Access Router card to a Primary Rate Interface card within the interworking function, wherein the Access Router card de-packetizes data from a Public Switched Telephone Network prior to transmitting the data to a wireless network, wherein the Access Router card packetizes data from the wireless network prior to transmitting the data to the Public Switched Telephone Network; and

providing a signaling protocol for an application card in the interworking function to transfer signaling information to the Access Router card.

13. The method of claim 12, further comprising removing T1/E1 trunks between the wireless switch and the interworking function.

14. The method of claim 12, wherein the signaling information includes trunk, port, and IP address information.

15. The system of claim 14, wherein the IP address information includes an IP address of the wireless switch, an IP address of the application card, an IP address of the Access Router card, and a UDP port number to be used for data exchange between the Access Router card and the wireless switch.

16. A method for providing an interface between a wireless switch and an interworking function, comprising in combination:

receiving signaling information over an Ethernet link;

assigning a trunk for bearer data transmission;

5 sending trunk, port, and IP address information to an Access Router card;

receiving bearer data over the Ethernet link;

translating the bearer data; and

transmitting the translated bearer data over the Ethernet link.

17. The method of claim 16, wherein the step of receiving signaling information over an Ethernet link includes receiving port and IP address information into an application card.

18. The method of claim 17, wherein the IP address information includes an IP address of the wireless switch, an IP address of the application card, an IP address of the Access Router card, and a UDP port number to be used for data exchange between the Access Router card and the wireless switch.

19. The method of claim 16, wherein the step of assigning a trunk for bearer data transmission includes an application card selecting the trunk.

20. The method of claim 16, wherein the step of sending trunk, port, and IP address information to an Access Router card includes an application card sending the trunk, port, and address information to the Access Router card using a signaling protocol.

21. The method of claim 16, wherein the step of receiving bearer data over the Ethernet link, includes the Access Router card receiving the bearer data from a Public Switched Telephone Network via the wireless switch.

22. The method of claim 16, wherein the step of receiving bearer data over the Ethernet link, includes an application card receiving the bearer data from a wireless network via the wireless switch.

23. The method of claim 16, wherein the step of translating the bearer data includes demodulating data received from a Public Switched Telephone Network to be delivered to a wireless network.

24. The method of claim 16, wherein the step of translating the bearer data includes modulating data received from a wireless network to be delivered to the Public Switched Telephone Network.

25. The method of claim 16, wherein the step of transmitting the translated bearer data over the Ethernet link includes the Access Router card transmitting the translated bearer data to a Public Switched Telephone Network via the wireless switch.

25. The method of claim 16, wherein the step of transmitting the translated bearer data over the Ethernet link includes an application card transmitting the translated bearer data to a wireless network via the wireless switch.

26. A method of routing calls, comprising in combination:  
    assigning a UDP port number to a bearer data call between a wireless switch and an interworking function;  
    providing an IP address indicating a type of data for the bearer data call; and  
    packetizing bearer data, wherein the packets include the assigned UDP port number and the IP address.

27. The method of claim 26, wherein providing an IP address of an application card indicates that the type of data is mobile data.

28. The method of claim 26, wherein providing an IP address of an Access Router card indicates that the type of data is Public Switched Telephone Network data.

29. An interworking function having an Ethernet interface for receiving and sending packetized data to a wireless switch, comprising in combination:

a Network Interface card connected to the wireless switch,

an Access Router card connected to the Network Interface card;

5 a Primary Rate Interface card connected to the Access Router card;

a modem card connected to the Primary Rate Interface card; and

an application card connected to the modem card, wherein the application card receives signaling information from the wireless switch and provides the signaling information to the Access Router card.

30. The system of claim 29, wherein the Access Router card packetizes data sent from the wireless switch destined for a Public Switched Telephone Network.

31. The system of claim 29, wherein the Access Router card de-packetizes data sent from the wireless switch destined for a wireless network.

32. The system of claim 29, wherein the modem card demodulates data received from the wireless switch to be delivered to a wireless network.

33. The system of claim 29, wherein the modem card modulates data received from the wireless switch to be delivered to the Public Switched Telephone Network.